1. A microscope comprising

an object holder (3),

optics which in an image plane form an image of an object (2) which is placed in the object holder, and

a digital image sensor (5), which has a number of sensor elements (6) for recording the image, c h a r a c t e r i s e d in that the image sensor and the image plane are arranged in such manner that the spatial frequency of the sensor elements (6) is higher than the maximum spatial frequency of the image, the microscope further comprising at least a first calculating means (24) which is connected to the image sensor (5) and which is adapted

to provide a two-dimensional filter function, which essentially has a first value at the spatial frequency zero, a second value which is different from zero at a spatial frequency above the maximum spatial frequency of the image and a peak value between the spatial frequency zero and the spatial frequency of the second value,

to calculate a digital filter which corresponds to a two-dimensional inverse Fourier transform of the filter function, and

to filter a recorded image by means of the digital filter.

2. A microscope as claimed in claim 1, c h a r a c t e r i s e d in that it also comprises an input means (9) connected to the calculating means for inputting values which provide information about at least one of the peak value of the filter function, the spatial frequency of the peak value, the filter function for spatial frequencies below the spatial frequency of the peak value, or the filter function for spatial frequencies above the spatial frequency of the peak value, the inputting means being connected to the calculating means and the inputted values being used by the calculating means to provide the filter function.

3. (Amended) A microscope as claimed in claim 1, characterised in that it also comprises a second calculating means (25), which is connected to the image sensor and the first calculating means, and which is adapted

to Fourier transform the recorded image,

to determine a limit frequency below which the major part of the light energy of the transformed image is to be found, and

to provide the first calculating means with the limit frequency as a value of the position of the peak value.

4. A microscope as claimed in claim 3, characterised in that the limit frequency is determined as the frequency below which at least 90% of the energy in the image is to be found.

5. (Amended) A microscope as claimed in claim 1, characterised in that the spatial frequency of the sensor elements is at least 1.5 times higher, and preferably at least 2 times higher, than the maximum spatial frequency of the image.

6. (Amended) A microscope as claimed in claim 3 characterised in that the spatial frequency of the sensor elements is at least 1.5 times higher, and preferably at least 2 times higher, than the limit frequency.

7. (Amended) A microscope as claimed in claim 1, characterised in that the filter function (17) is continuous and strictly growing from zero frequency to the position of the peak value and strictly increasing toward zero for increasing frequencies from the position of the peak value.

8. (Amended) A microscope as claimed in claim 1, characterised in that the filter function (17) is a convolution of two one-dimensional filter functions.

9. (Amended) A microscope as claimed in claim 1, characterised in that the filtered image is stored in a storage means (26).

10. (Amended) A microscope as claimed in claim 1, characterised in that it also comprises a display (8) on which the filtered image is shown.

11. (Amended) A microscope as claimed in claim 1, characterised in that the first calculating means is adapted

to divide the recorded image into colour components, and

to provide a digital filter for each of the colour components.

12. (Amended) A microscope as claimed in claim 1, characterised in that the first value essentially is one.

13. (New) A microscope as claimed in claim 2, characterised in that it also comprises a second calculating means (25), which is connected to the image sensor and the first calculating means, and which is adapted

to Fourier transform the recorded image,

to determine a limit frequency below which the major part of the light energy of the transformed image is to be found, and

to provide the first calculating means with the limit frequency as a value of the position of the peak value.

14. (New) A microscope as claimed in claim 2, characterised in that the spatial frequency of the sensor elements is at least 1.5 times higher, and preferably at least 2 times higher, than the maximum spatial frequency of the image.

15. (New) A microscope as claimed in claim 3, characterised in that the spatial frequency of the sensor elements is at least 1.5 times higher, and preferably at least 2 times higher, than the maximum spatial frequency of the image.

16. (New) A microscope as claimed in claim 13, characterised in that the spatial frequency of the sensor elements is at least 1.5 times higher, and preferably at least 2 times

17. (New) A microscope as claimed in claim 4 characterised in that the spatial frequency of the sensor elements is at least 1.5 times higher, and preferably at least 2 times higher, than the limit frequency.

18. (New) A microscope as claimed in claim 2, characterised in that the filter function (17) is continuous and strictly growing from zero frequency to the position of the peak value and strictly increasing toward zero for increasing frequencies from the position of the peak value.

19. (New) A microscope as claimed in claim 2, characterised in that the filter function (17) is a convolution of two one-dimensional filter functions.

20. (New) A microscope as claimed in claim 2, characterised in that the filtered image is stored in a storage means (26).